CLAIMS

What is claimed is:

1   1.   A method of calculating displacement vectors

2   corresponding to respective reference image regions of a

3   reference frame of an image-sequence, comprising the steps

4   of:

5   optimizing a function whose value depends on a

6   closeness in value of each of said reference image region

7   displacement vectors to values of adjacent ones of said

8   reference image region displacement vectors;

9   said function being more sensitive to said

10   closeness in value when an image property of said each of

11   said reference region displacement vectors is close in value

12   to said adjacent ones and less sensitive to said closeness in

13   value when an image property of said each of said reference

14   region displacement vectors is close in value to said

15   adjacent ones.

1   2.   A method as in claim 1, wherein said function

2   value depends on a similarity of said reference regions to

3   respective target regions.

1   3.   A method as in claim 1, wherein said image

2   property includes color.

1   4.   A method as in claim 1, wherein said image

2   property includes an average color.

1   5.   A method as in claim 4, wherein said function

2   value depends on a similarity of said reference regions to

3   respective target regions.

1   6.   A method as in claim 1, wherein said image

2   property includes a color normalized by an estimate of color

3   variation characteristic of said each of said reference

4   regions and said adjacent ones.

1   7.   A method as in claim 1, wherein said function

2   is a combination of a function whose value depends on a

3   similarity of said reference regions to respective target

4   regions and a function whose value depends on a closeness in

5   value of each of said reference image region displacement

6   vectors to values of adjacent ones of said reference image

7   region displacement vectors.

1   8.   A method as in claim 7, wherein said image

2   property includes color.

1   9.   A method as in claim 7, wherein said image

2   property includes an average color.

1   10.   A method as in claim 7, wherein said image

2   property includes a color normalized by an estimate of color

3   variation characteristic of said each of said reference

4   regions and said adjacent ones.

1   11.   A method for calculating a smooth motion

2   vector field of an image sequence, comprising the steps of:

3   calculating displacement vectors for each of a

4   plurality of image segments responsively to displacement

5   vectors of a spatially-neighboring set of said plurality of

6   image segments;

7   said step of calculating being responsive to an

8   image property of each of said neighboring set of image

9   segments.

1   12.   A method as in claim 11, wherein said image

2   property is responsive to a variation of said image property

3   over at least one of said each of a plurality and said each

4   of said neighboring set of image segments.

1   13.   A method as in claim 11, wherein said image

2   property includes color.

1   14.   A method as in claim 13, wherein said image

2   property includes an average color of said reference regions.

1   15.   A method as in claim 11, wherein said image

2   property includes luminosity.

1   16.   A method as in claim 15, wherein said image

2   property includes a color.

1   17. A medium holding program data, said program

2 data defining a method for calculating a motion vector field

3 of a image sequence stream, comprising the steps of:

4   optimizing a function whose value depends on a

5 closeness in value of each of said reference image region

6 displacement vectors to values of adjacent ones of said

7 reference image region displacement vectors;

8   said function being more sensitive to said

9 closeness in value when an image property of said each of

10 said reference region displacement vectors is close in value

11 to said adjacent ones and less sensitive to said closeness in

12 value when an image property of said each of said reference

13 region displacement vectors is close in value to said

14 adjacent ones.

1   18. A method as in claim 17 wherein said function

2 value depends on a similarity of said reference regions to

3 respective target regions.

1   19. A method as in claim 17 wherein said image

2 property includes color.

1   20. A method as in claim 17 wherein said image

2 property includes an average color.

1   21. A method as in claim 20, wherein said function

2 value depends on a similarity of said reference regions to

3 respective target regions.

1   22. A method as in claim 17, wherein said image

2 property includes a color normalized by an estimate of color

3 variation characteristic of said each of said reference

4 regions and said adjacent ones.

1   23. A method as in claim 17, wherein said function

2 is a combination of a function whose value depends on a

3 similarity of said reference regions to respective target

4 regions and a function whose value depends on a closeness in

5 value of each of said reference image region displacement

6 vectors to values of adjacent ones of said reference image

7 region displacement vectors.

1   24. A method as in claim 23, wherein said image

2 property includes color.

1   25. A method as in claim 23, wherein said image

2 property includes an average color.

1   26. A method as in claim 23, wherein said image

2 property includes a color normalized by an estimate of color

3 variation characteristic of said each of said reference

4 regions and said adjacent ones.